SANTA CRUZ BIOTECHNOLOGY, INC.

HSF4b (V-18): sc-19863

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Prokaryotic and eukaryotic cells respond to thermal and chemical stress by inducing a group of genes collectively designated heat shock genes. In eukaryotes, this gene expression is regulated primarily at the transcription level. Heat shock transcription factors (HSF, also designated HSF) 1 and 2 are involved in this regulation. HSF1 and HSF2 are upregulated by estrogen, at both the mRNA and protein level. HSF1 transcriptional activity is repressed by constitutive phosphorylation and it is typically found in monomeric form. Upon activation, HSF1 forms trimers, gains DNA binding activity and is translocated to the nucleus. HSF2 activity is associated with differentiation and development. Like HSF1, HSF2 binds DNA as a trimer. HSF4 exists as two splice variants and is expressed in heart, brain and skeletal muscle as a homotrimer. HSF4a does not contain a DNA-binding domain and inhibits the formation of HSF1 nuclear bodies, thus repressing HSF1 mediated transcription. HSF4b does contain a DNA-binding domain and colocalizes with HSF1 nuclear bodies after heat shock.

REFERENCES

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2. Yang, X., Dale, E.C., Diaz, J. and Shyamala, G. 1995. Estrogen dependent expression of heat shock transcription factor: implications for uterine synthesis of heat shock proteins. J. Steroid Biochem. Mol. Biol. 52: 415-419.
3. Wyman, C., Grotkopp, E., Bustamante, C. and Nelson, H.C. 1995. Determination of heat-shock transcription factor 2 stoichiometry at looped DNA complexes using scanning force microscopy. EMBO J. 14: 117-123.
4. Nakai, A., Tanabe, M., Kawazoe, Y., Inazawa, J., Morimoto, R.I. and Nagata, K. 1997. HSF4, a new member of the human heat shock factor family which lacks properties of a transcriptional activator. Mol. Cell. Biol. 17: 469-481.
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CHROMOSOMAL LOCATION

Genetic locus: HSF4 (human) mapping to 16q22.1; Hsf4 (mouse) mapping to 8 D3.

SOURCE

HSF4b (V-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HSF4b of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-19863 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-19863 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HSF4b (V-18) is recommended for detection of HSTF4b of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HSF4b (V-18) is also recommended for detection of HSF4b in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HSF4b siRNA (m): sc-37927, HSF4b shRNA Plasmid (m): sc-37927-SH and HSF4b shRNA (m) Lentiviral Particles: sc-37927-V.

HSF4b (V-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HSF4b: 62 kDa.

Positive Controls: mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.